

## PATENT

### WE CLAIM:

1. A telecommunications and data transmission fiber optic cable storage enclosure for providing the maximum internal volume therein for housing a cable storage reel in an enclosure which must fit in sliding horizontal reciprocating relation through an aperture having a fixed width and height formed in the front surface of a pre-existing vertical rack, said enclosure comprising

a rectangular box enclosure having a flat bottom pan, two side panels, a rear panel, and a front panel faceplate, said side panels having a height, and said rear panel having a height and width, small enough to fit through said aperture in said front surface of said rack, said side panels of said enclosure having the exterior surfaces thereof formed for engaging shelf rails in the form of C section members forming slide channels secured to a rack and formed for receiving said side panels of said enclosure in a horizontal sliding reciprocating relation in a vertical stack of enclosures,

a cable reel disposed for rotation in said enclosure with a vertical axis of rotation and the periphery thereof being positioned in close relation to at least said side panels thereof, said reel having a pair of horizontally oriented parallel side plates mounted on opposite sides of a central circular hub, said reel having a multiple of low-rise protuberances formed around said hub at least on the lower plate exterior surface of said reel whereby said reel rests in said enclosure on said bottom pan and rotates thereon on said protuberances, and further whereby the clearance between said pan and said lower reel plate is minimal and considerably less than the diameter of the cable to be wound on said reel and still further whereby the width of said hub between said plates is maximized within said enclosure between the top surface plane of said box and

## PATENT

said bottom pan, and still further whereby a predetermined length of said fiber optic cable can be wound thereon without excess thereof being stored in the corners of said enclosure and without fracturing the internal fibers of said cable by being wound with too acute of an angular bend around said hub,

at least one coupler being secured to a first or fixed end of said cable disposed proximate to said central hub of said reel when cable is wound on said reel around said hub, said coupler being formed to engage a receptor disposed in said face plate of said enclosure, the opposite end of said cable from said first fixed end being a second or free end of said cable and having a coupler secured thereto for engaging a remotely located receptor,

at least one receptor disposed in said faceplate panel for receiving male and female couplers and an opening in said faceplate panel within which said second free end of said cable can be disposed for extraction therethrough, and

a locking means actuated by a lever pivoted in said faceplate for engaging said shelf rails selectively.

2. The enclosure of claim 1 wherein said locking means is comprised of a pair of pins projecting laterally from said side panels and has a first biasing means for engaging with said pins with said shelf rails, said locking means having actuation means for selectively retracting said pins from engagement with said shelf rails and including a second biasing means to counteract said first biasing means to hold said locking means out of engagement with said shelf rails.

## PATENT

3. The enclosure of claim 1 wherein said shelf rails are formed of C section members secured to said rack and formed to receive said side walls of said enclosure therein for sliding horizontal movement with respect thereto.

4. The enclosure of claim 1 including a top cover secured to said enclosure in a manner to permit it to be selectively opened to expose the interior of said enclosure.

5. The enclosure of claim 4 wherein said top cover is engaged with the top edges of said side panels of said enclosure in sliding relation to permit said cover to reciprocate open and closed in a horizontal sliding relation.

6. The enclosure of claim 5 wherein the top edges of said side panels are recessed away from the opposing surfaces of said C section members, respectively, a distance slightly greater than the thickness of said cover, and said cover is provided with depending lateral flanges which project between and are captured between said top edges of said side panels and said opposing surfaces of said C section members in sliding relation.

7. The enclosure of claim 1 wherein said couplers are male and female MTP connectors and said receptors are MTP adapters.

8. A telecommunications and data transmission fiber optic cable enclosure for providing the maximum internal volume therein for housing a cable storage reel in an enclosure

## PATENT

which must fit in sliding horizontal reciprocating relation through an aperture having a fixed width and height formed in the front surface of a pre-existing vertical rack, said enclosure comprising

a rectangular box enclosure having a flat bottom pan, a top cover, two side panels, a rear panel, and a front panel face plate, said side panels of said enclosure having the exterior surfaces thereof formed for engaging shelf rails in the form of C section members secured to a rack and formed for receiving said side panels of said enclosure in a horizontal sliding reciprocating relation in a vertical stack of enclosures, said side panels having the top edges thereof being recessed away from the opposing surfaces of said C section members on said rack, said cover being provided with depending lateral flanges which project between and are captured between said top edges of said side panels and said opposing surfaces of said C section members in sliding relation to permit said cover to reciprocate open and closed in a horizontal sliding relation whereby it can be opened to expose the interior of said enclosure, said side panels having a height, and said rear panel having a height and width, small enough to fit through said aperture,

a cable reel disposed for rotation in said enclosure with a vertical axis of rotation and the periphery thereof being positioned in close relation to at least said side panels thereof, said reel having a pair of horizontally oriented parallel side plates mounted on opposite sides of a central circular hub, said reel having a multiple of low-rise protuberances formed around said hub at least on the lower plate exterior surface of said reel whereby said reel rests in said enclosure on said bottom pan and rotates thereon on said protuberances, and further whereby the clearance between said pan and said lower reel plate is minimal and considerably less than the diameter

## PATENT

of the cable to be wound on said reel and still further whereby the width of said hub between said plates is maximized within said enclosure between said top cover and said bottom pan, and still further whereby a predetermined length of said fiber optic cable can be wound thereon without excess thereof being stored in the corners of said enclosure and without fracturing the internal fibers of said cable by being wound with too acute of an angular bend around said hub,

at least one MTP connector being secured to a first or fixed end of said cable disposed proximate to said central hub of said reel when cable is wound on said reel around said hub, said connector being formed to engage an MTP adapter disposed in said face plate of said enclosure, the opposite end of said cable from said first fixed end being a second or free end of said cable and having at last one MTP connector end formed thereon for engaging a remotely located second MTP adapter,

at least one MTP adapter disposed in said faceplate panel for receiving male and female MTP connectors and an opening in said faceplate panel through which said second free end of said cable can be disposed for extraction therethrough,

a locking means actuated by a lever pivoted in said faceplate and comprising a pair of pins laterally projecting from said side panels and having a first biasing means for engaging said pins with said slide channels, said locking means having actuation means for selectively retracting said pins from engagement with said channels and including a second biasing means to counteract said first biasing means and hold said locking means out of engagement with said channels, and

a removable reel actuating handle for engaging said reel proximate the periphery thereof and effecting manual rotation of said reel in said enclosure for winding cable onto said reel.